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Fua, P.; Leclerc, Y.G.;

Computer Vision and Pattern Recognition, 1994. Proceedings CVPR '94., 1994

Society Conference on
21-23 June 1994 Page(s):121 - 128
Digital Object Identifier 10.1109/CVPR.1994.323818

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6. Recognition of partially occluded 3D objects
Ming-Hong Chan; Hung-Tat Tsui;
Computers and Digital Techniques, IEE ProceedingsVolume 136, Issue 2, Mar 1989 Page(s):124 - 141
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101 Session P1: medical visualization: Direct surface extraction from 3D freehand

ultrasound images Youwei Zhang, Robert Rohling, Dinesh K. Pai

October 2002 Proceedings of the conference on Visualization '02 VIS '02

**Publisher: IEEE Computer Society** 

Full text available: pdf(1.10 MB)

Additional Information: full citation, abstract, references

This paper presents a new technique for the extraction of surfaces from 3D ultrasound data. Surface extraction from ultrasound data is challenging for a number of reasons including noise and artifacts in the images and non-uniform data sampling. A method is proposed to fit an approximating radial basis function to the group of data samples. An explicit surface is then obtained by iso-surfacing the function. In most previous 3D ultrasound research, a pre-processing step is taken to interpolate th ...

Keywords: 3D freehand ultrasound, direct surface extraction, isosurface, radial basis functions, ultrasound, unstructured data

102 Shape distributions

Robert Osada, Thomas Funkhouser, Bernard Chazelle, David Dobkin October 2002 ACM Transactions on Graphics (TOG), Volume 21 Issue 4

Publisher: ACM Press

Full text available: pdf(3.46 MB)

Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, index

terms

Measuring the similarity between 3D shapes is a fundamental problem, with applications in computer graphics, computer vision, molecular biology, and a variety of other fields. A challenging aspect of this problem is to find a suitable shape signature that can be constructed and compared quickly, while still discriminating between similar and dissimilar shapes. In this paper, we propose and analyze a method for computing shape signatures for arbitrary (possibly degenerate) 3D polygonal models. The ...

**Keywords**: Shape analysis, shape representation

103 Modelling with implicit surfaces that interpolate Greg Turk, James F. O'brien



October 2002 ACM Transactions on Graphics (TOG), Volume 21 Issue 4

Publisher: ACM Press

Full text available: pdf(1.54 MB)

Additional Information: full citation, abstract, references, citings, index terms

We introduce new techniques for modelling with interpolating implicit surfaces. This form of implicit surface was first used for problems of surface reconstruction and shape transformation, but the emphasis of our work is on model creation. These implicit surfaces are described by specifying locations in 3D through which the surface should pass, and also identifying locations that are interior or exterior to the surface. A 3D implicit function is created from these constraints using a var ...

Keywords: Implicit surfaces, function interpolation, modeling, thin-plate techniques

104 Heads, faces, hair: Head shop: generating animated head models with anatomical

structure

Kolja Kähler, Jörg Haber, Hitoshi Yamauchi, Hans-Peter Seidel

July 2002 Proceedings of the 2002 ACM SIGGRAPH/Eurographics symposium on **Computer animation SCA '02** 

Publisher: ACM Press

Full text available: pdf(9.67 MB)

Additional Information: full citation, abstract, references, citings, index terms

We present a versatile construction and deformation method for head models with anatomical structure, suitable for real-time physics-based facial animation. The model is equipped with landmark data on skin and skull, which allows us to deform the head in anthropometrically meaningful ways. On any deformed model, the underlying muscle and bone structure is adapted as well, such that the model remains completely animatable using the same muscle contraction parameters. We employ this general techni ...

**Keywords:** biological modeling, deformations, facial animation, geometric modeling, morphing, physically based animation

105 Level set surface editing operators



Ken Museth, David E. Breen, Ross T. Whitaker, Alan H. Barr

July 2002 ACM Transactions on Graphics (TOG), Proceedings of the 29th annual conference on Computer graphics and interactive techniques SIGGRAPH **'02**, Volume 21 Issue 3

Publisher: ACM Press

Full text available: pdf(11.19 MB)

Additional Information: full citation, abstract, references, citings, index terms

We present a level set framework for implementing editing operators for surfaces. Level set models are deformable implicit surfaces where the deformation of the surface is controlled by a speed function in the level set partial differential equation. In this paper we define a collection of speed functions that produce a set of surface editing operators. The speed functions describe the velocity at each point on the evolving surface in the direction of the surface normal. All of the information n ...

**Keywords**: deformations, geometric modeling, implicit surfaces, shape blending

106 Least squares conformal maps for automatic texture atlas generation

Bruno Lévy, Sylvain Petitjean, Nicolas Ray, Jérome Maillot

July 2002 ACM Transactions on Graphics (TOG), Proceedings of the 29th annual

#### conference on Computer graphics and interactive techniques SIGGRAPH

**'02**, Volume 21 Issue 3

Publisher: ACM Press

Full text available: pdf(8.23 MB)

Additional Information: full citation, abstract, references, citings, index

A Texture Atlas is an efficient color representation for 3D Paint Systems. The model to be textured is decomposed into charts homeomorphic to discs, each chart is parameterized, and the unfolded charts are packed in texture space. Existing texture atlas methods for triangulated surfaces suffer from several limitations, requiring them to generate a large number of small charts with simple borders. The discontinuities between the charts cause artifacts, and make it difficult to paint large areas w ...

**Keywords:** paint systems, polygonal modeling, texture mapping

### 107 Feature-based light field morphing

Zhunping Zhang, Lifeng Wang, Baining Guo, Heung-Yeung Shum

July 2002 ACM Transactions on Graphics (TOG), Proceedings of the 29th annual conference on Computer graphics and interactive techniques SIGGRAPH

'02, Volume 21 Issue 3

Publisher: ACM Press

Full text available: pdf(7.77 MB)

Additional Information: full citation, abstract, references, citings, index terms

We present a feature-based technique for morphing 3D objects represented by light fields. Our technique enables morphing of image-based objects whose geometry and surface properties are too difficult to model with traditional vision and graphics techniques. Light field morphing is not based on 3D reconstruction; instead it relies on ray correspondence, i.e., the correspondence between rays of the source and target light fields. We address two main issues in light field morphing: feature s ...

Keywords: 3D morphing, feature polygons, global visibility map, light field, ray correspondence, ray-space warping

# 108 Light field mapping: efficient representation and hardware rendering of surface light



Wei-Chao Chen, Jean-Yves Bouguet, Michael H. Chu, Radek Grzeszczuk

July 2002 ACM Transactions on Graphics (TOG), Proceedings of the 29th annual conference on Computer graphics and interactive techniques SIGGRAPH **'02**, Volume 21 Issue 3

Publisher: ACM Press

Full text available: pdf(7.79 MB)

Additional Information: full citation, abstract, references, citings; index terms

A light field parameterized on the surface offers a natural and intuitive description of the view-dependent appearance of scenes with complex reflectance properties. To enable the use of surface light fields in real-time rendering we develop a compact representation suitable for an accelerated graphics pipeline. We propose to approximate the light field data by partitioning it over elementary surface primitives and factorizing each part into a small set of lower-dimensional functions. We show th ...

Keywords: compression algorithms, image-based rendering, rendering hardware, texture mapping

109 Poster Session: Using shape distributions to compare solid models



Cheuk Yiu Ip, Daniel Lapadat, Leonard Sieger, William C. Regli



Full text available: pdf(237.71 KB)

Additional Information: full citation, abstract, references, citings, index terms

Our recent work has described how to use feature and topology in-formation to compare 3-D solid models. In this work we describe a new method to compare solid models based on shape distributions. Shape distribution functions are common in the computer graphics and computer vision communities. The typical use of shape dis-tributions is to compare 2-D objects, such as those obtained from imaging devices (cameras and other computer vision equipment). Recent work has applied shape distribution metri ...

Keywords: 3D search, shape matching, shape recognition, solid model databases

110 Improved construction of vertical decompositions of three-dimensional arrangements



Hayim Shaul, Dan Halperin June 2002 Proceedings of the eighteenth annual symposium on Computational geometry SCG '02

Publisher: ACM Press

Full text available: pdf(322.54 KB)

Additional Information: full citation, abstract, references, citings, index terms

We present new results concerning the refinement of three-dimensional arrangements by vertical decompositions. First, we describe a new output-sensitive algorithm for computing the vertical decomposition of arrangements of n triangles in  $O(n\log^2 n + V\log n)$ time, where V is the complexity of the decomposition. This improves significantly over the best previously known algorithms. Next, we propose an alternative sparser refinement, which w ...

Keywords: arrangements, exact computation, geometric software, vertical decomposition

111 Alternate rendering pipeline: Cartoon dioramas in motion



Ramesh Raskar, Remo Ziegler, Thomas Willwacher

June 2002 Proceedings of the 2nd international symposium on Non-photorealistic animation and rendering NPAR '02

Publisher: ACM Press

Full text available: pdf(739.52 KB)

Additional Information: full citation, abstract, references, citings, index terms

Cartoon animations delight the audience with moving characters but they remain on a flat 2D screen. The cartoon dioramas, on the other hand, are detailed, three-dimensional and allow physical interaction but they are static. We present techniques to combine the two in some limited cases. We illuminate static physical models with projectors. The images are generated with real time three dimensional computer graphics. We describe a system to demonstrate various visual effects such as non-photoreal ...

**Keywords**: augmented reality, immersive environments, non-photorealistic rendering, perception, virtual reality

112 A survey of methods for recovering quadrics in triangle meshes Sylvain Petitjean June 2002 ACM Computing Surveys (CSUR), Volume 34 Issue 2





Publisher: ACM Press

Full text available: pdf(3.91 MB)

Additional Information: full citation, abstract, references, citings, index terms

In a variety of practical situations such as reverse engineering of boundary representation from depth maps of scanned objects, range data analysis, model-based recognition and algebraic surface design, there is a need to recover the shape of visible surfaces of a dense 3D point set. In particular, it is desirable to identify and fit simple surfaces of known type wherever these are in reasonable agreement with the data. We are interested in the class of quadric surfaces, that is, algebraic surfa ...

Keywords: Data fitting, geometry enhancement, local geometry estimation, mesh fairing, shape recovery

113 Modelling urban environments: Modeling and visualizing the cultural heritage data set



of Graz

Christopher Zach, Andreas Klaus, Joachim Bauer, Konrad Karner, Markus Grabner November 2001 Proceedings of the 2001 conference on Virtual reality, archeology, and cultural heritage VAST '01

Publisher: ACM Press

Full text available: pdf(4.95 MB)

Additional Information: full citation, abstract, references, citings, index terms

The inner city (Old Town) of Graz will be the European cultural capital in 2003. In this paper we present preliminary results on the reconstruction and visualization of this kind of cultural heritage data. Starting with a simple block model obtained by converting 2 1/2 dimensional GIS (geographic information system) data we focus on the image based modeling of the facades. Herein we illustrate a robust search for corresponding points to estimate the relative orientation between image pairs. Addit ...

114 Archiving, digital collections, and analysis: Image-based 3D acquisition of



archaeological heritage and applications

Marc Pollefeys, Luc Van Gool, Maarten Vergauwen, Kurt Cornelis, Frank Verbiest, Jan Tops November 2001 Proceedings of the 2001 conference on Virtual reality, archeology, and cultural heritage VAST '01

Publisher: ACM Press

Full text available: pdf(1.13 MB)

Additional Information: full citation, abstract, references, citings, index terms

In this paper an approach is presented that obtains virtual models from sequences of images. The system can deal with uncalibrated image sequences acquired with a handheld camera. Based on tracked or matched features the relations between multiple views are computed. From this both the structure of the scene and the motion of the camera are retrieved. The ambiguity on the reconstruction is restricted from projective to metric through auto-calibration. A flexible multi-view stereo matching schem ...

Keywords: image-based modelling, large scale terrain modelling, site reconstruction, virtual archaeology

115 Session E: Interaction in mixed realities: Interacting with spatially augmented reality



Ramesh Raskar, Kok-Lim Low

November 2001 Proceedings of the 1st international conference on Computer graphics, virtual reality and visualisation AFRIGRAPH '01

Publisher: ACM Press

Full text available: Dodf(940.14 KB) Additional Information: full citation, abstract, references, index terms

We present the notion of projector-based spatially augmented reality (SAR), and explore how it can be used as an effective user interface to enable users to easily and naturally interact with their real physical environment and the virtual environment. In SAR, the user's physical environment is illuminated with images projected from the projectors. We then describe a framework that can easily incorporate different types of interactions on a continuum of display surfaces and input devices. ...

116 Session P1: point-based rendering and modeling: Point set surfaces

Marc Alexa, Johannes Behr, Daniel Cohen-Or, Shachar Fleishman, David Levin, Claudio T. Silva

October 2001 Proceedings of the conference on Visualization '01 VIS '01

Publisher: IEEE Computer Society

Full text available: Additional Information: full citation, abstract, references, citings, index Publisher Site

We advocate the use of point sets to represent shapes. We provide a definition of a smooth manifold surface from a set of points close to the original surface. The definition is based on local maps from differential geometry, which are approximated by the method of moving least squares (MLS). We present tools to increase or decrease the density of the points, thus, allowing an adjustment of the spacing among the points to control the fidelity of the representation. To display the point set surfac ...

Keywords: 3D acquisition, moving least squares, point sample rendering, surface representation and reconstruction

117 Session P9: interactive volume rendering: Interactive volume rendering using multidimensional transfer functions and direct manipulation widgets

Joe Kniss, Gordon Kindlmann, Charles Hansen

October 2001 Proceedings of the conference on Visualization '01 VIS '01

Publisher: IEEE Computer Society

Full text available: pdf(995.63 KB)

Additional Information: full citation, abstract, references, citings, index terms

Most direct volume renderings produced today employ one-dimensional transfer functions, which assign color and opacity to the volume based solely on the single scalar quantity which comprises the dataset. Though they have not received widespread attention, multi-dimensional transfer functions are a very effective way to extract specific material boundaries and convey subtle surface properties. However, identifying good transfer functions is difficult enough in one dimension, let alone two or thr ...

**Keywords**: direct manipulation widgets, direct volume rendering, graphics hardware, multi-dimensional transfer functions, volume visualization

118 Searching in high-dimensional spaces: Index structures for improving the

performance of multimedia databases

Christian Böhm, Stefan Berchtold, Daniel A. Keim

September 2001 ACM Computing Surveys (CSUR), Volume 33 Issue 3

Publisher: ACM Press

Full text available: pdf(1.39 MB)

Additional Information: full citation, abstract, references, citings, index terms

During the last decade, multimedia databases have become increasingly important in many application areas such as medicine, CAD, geography, and molecular biology. An

http://portal.acm.org/results.cfm?query=%2B%22computer%20vision%22%20%2B%22thr... 4/5/2007





important research issue in the field of multimedia databases is the content-based retrieval of similar multimedia objects such as images, text, and videos. However, in contrast to searching data in a relational database, a content-based retrieval requires the search of similar objects as a basic functionality of the database system ...

Keywords: Index structures, indexing high-dimensional data, multimedia databases, similarity search

119 Computing curricula 2001

September 2001 Journal on Educational Resources in Computing (JERIC)

Publisher: ACM Press

Full text available: pdf(613.63 KB) html(2.78 KB)

Additional Information: full citation, references, citings, index terms

120 <u>Scanning physical interaction behavior of 3D objects</u>

Dinesh K. Pai, Kees van den Doel, Doug L. James, Jochen Lang, John E. Lloyd, Joshua L. Richmond, Som H. Yau

August 2001 Proceedings of the 28th annual conference on Computer graphics and interactive techniques SIGGRAPH '01

Publisher: ACM Press

Additional Information: full citation, abstract, references, citings, index Full text available: pdf(1.52 MB) terms, review

We describe a system for constructing computer models of several aspects of physical interaction behavior, by scanning the response of real objects. The behaviors we can successfully scan and model include deformation response, contact textures for interaction with force-feedback, and contact sounds. The system we describe uses a highly automated robotic facility that can scan behavior models of whole objects. We provide a comprehensive view of the modeling process, including selection of mod ...

Keywords: behavioral animation, deformations, haptics, multimedia, physically based modeling, robotics, sound visualization

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121 Synthesizing bidirectional texture functions for real-world surfaces



Xinguo Liu, Yizhou Yu, Heung-Yeung Shum

August 2001 Proceedings of the 28th annual conference on Computer graphics and interactive techniques SIGGRAPH '01

Publisher: ACM Press

Full text available: pdf(4.30 MB)

Additional Information: full citation, abstract, references, citings, index terms

In this paper, we present a novel approach to synthetically generating bidirectional texture functions (BTFs) of real-world surfaces. Unlike a conventional two-dimensional texture, a BTF is a six-dimensional function that describes the appearance of texture as a function of illumination and viewing directions. The BTF captures the appearance change caused by visible small-scale geometric details on surfaces. From a sparse set of images under different viewing/lighting settings, our approach q ...

Keywords: bidirectional texture functions, image-based rendering, photometric stereo, reflectance and shading models, shape-from-shading, texture synthesis

122 Plenoptic stitching: a scalable method for reconstructing 3D interactive walk throughs





Daniel G. Aliaga, Ingrid Carlbom

August 2001 Proceedings of the 28th annual conference on Computer graphics and interactive techniques SIGGRAPH '01

Publisher: ACM Press

Full text available: pdf(16.67 MB)

Additional Information: full citation, abstract, references, citings, index terms

Interactive walkthrough applications require detailed 3D models to give users a sense of immersion in an environment. Traditionally these models are built using computer-aided design tools to define geometry and material properties. But creating detailed models is time-consuming and it is also difficult to reproduce all geometric and photometric subtleties of real-world scenes. Computer vision attempts to alleviate this problem by extracting geometry and photogrammetry from images of the real ...

Keywords: image-based rendering, interactive walkthroughs, omnidirectional, plenoptic function, virtual environments

### 123 Feature sensitive surface extraction from volume data

Leif P. Kobbelt, Mario Botsch, Ulrich Schwanecke, Hans-Peter Seidel

August 2001 Proceedings of the 28th annual conference on Computer graphics and interactive techniques SIGGRAPH '01

Publisher: ACM Press

Full text available: pdf(2.05 MB)

Additional Information: full citation, abstract, references, citings, index terms

The representation of geometric objects based on volumetric data structures has advantages in many geometry processing applications that require, e.g., fast surface interrogation or boolean operations such as intersection and union. However, surface based algorithms like shape optimization (fairing) or freeform modeling often need a topological manifold representation where neighborhood information within the surface is explicitly available. Consequently, it is necessary to find effect ...

#### 124 Intelligent balloon: a subdivision-based deformable model for surface reconstruction





of arbitrary topology Ye Duan, Hong Qin

> May 2001 Proceedings of the sixth ACM symposium on Solid modeling and applications SMA '01

Publisher: ACM Press

Full text available: pdf(1.44 MB)

Additional Information: full citation, abstract, references, citings, index terms

In this paper, we develop a novel subdivision-based model—Intelligent Balloon—which is capable of recovering arbitrary, complicated shape geometry as well as its unknown topology simultaneously. Our Intelligent Balloon is a parameterized subdivision surface whose geometry and its deformable behaviors are governed by the principle of energy minimization. Our algorithm starts from a simple seed model (of genus zero) that can be arbitrarily initiated by users within regions of intere ...

Keywords: biomedical applications, energy optimization, geometric and topological representations, reverse engineering

# <sup>125</sup> Scanline surfacing: building separating surfaces from planar contours

David Weinstein

October 2000 Proceedings of the conference on Visualization '00 VIS '00

Publisher: IEEE Computer Society Press

Full text available: pdf(2.16 MB) Additional Information: full citation, abstract, citings, index terms

This paper presents several low-latency mixed-timing FIFO designs that interface systems on a chip working at different speeds. The connected systems can be either synchronous or asynchronous. The design are then adapted to work between systems with very long interconnection delays, by migrating a singel-clock solution by carloni et al. (for "latencyinsensitive" protocols) to mixed-timing domains. THe new designs can be made arbitrarily robust with regard to metastability and i ...

Keywords: planar contours, scanline, separating surfaces, surface construction

#### 126 Anisotropic geometric diffusion in surface processing

U. Clarenz, U. Diewald, M. Rumpf

October 2000 Proceedings of the conference on Visualization '00 VIS '00

Publisher: IEEE Computer Society Press

Full text available: pdf(4.65 MB) Additional Information: full citation, citings, index terms **Keywords**: geometric modeling, image processing, numerical analysis

127 Surface light fields for 3D photography

Daniel N. Wood, Daniel I. Azuma, Ken Aldinger, Brian Curless, Tom Duchamp, David H. Salesin, Werner Stuetzle

July 2000 Proceedings of the 27th annual conference on Computer graphics and interactive techniques SIGGRAPH '00

Publisher: ACM Press/Addison-Wesley Publishing Co.

Additional Information: full citation, abstract, references, citings, index Full text available: pdf(4.61 MB) terms

A surface light field is a function that assigns a color to each ray originating on a surface. Surface light fields are well suited to constructing virtual images of shiny objects under complex lighting conditions. This paper presents a framework for construction, compression, interactive rendering, and rudimentary editing of surface light fields of real objects. Generalization of vector quantization and principal component analysis are used to construct a compressed repres ...

Keywords: 3D photography, function quantization, image-based rendering, light field, lumigraph, principal function analysis, surface light fields, view-dependent level-of-detail, wavelets

128 Image-based rendering: A new interface between computer vision and computer

graphics

Leonard McMillan, Steven Gortler

November 1999 ACM SIGGRAPH Computer Graphics, Volume 33 Issue 4

Publisher: ACM Press

Full text available: pdf(1.24 MB) Additional Information: full citation, index terms

129 Image-based modeling and lighting

Paul E. Debevec

November 1999 ACM SIGGRAPH Computer Graphics, Volume 33 Issue 4

Publisher: ACM Press

Full text available: pdf(1.94 MB) Additional Information: full citation, citings, index terms

130 Data clustering: a review

A. K. Jain, M. N. Murty, P. J. Flynn

September 1999 ACM Computing Surveys (CSUR), Volume 31 Issue 3

Publisher: ACM Press

Additional Information: full citation, abstract, references, citings, index Full text available: pdf(636.24 KB) terms, review

Clustering is the unsupervised classification of patterns (observations, data items, or feature vectors) into groups (clusters). The clustering problem has been addressed in many contexts and by researchers in many disciplines; this reflects its broad appeal and usefulness as one of the steps in exploratory data analysis. However, clustering is a difficult problem combinatorially, and differences in assumptions and contexts in different communities has made the transfer of useful generic co ...

**Keywords**: cluster analysis, clustering applications, exploratory data analysis, incremental clustering, similarity indices, unsupervised learning

#### 131 A morphable model for the synthesis of 3D faces

Volker Blanz, Thomas Vetter

July 1999 Proceedings of the 26th annual conference on Computer graphics and interactive techniques SIGGRAPH '99

Publisher: ACM Press/Addison-Wesley Publishing Co.

Full text available: pdf(2.76 MB)

Additional Information: full citation, references, citings, index terms

**Keywords**: computer vision, facial animation, facial modeling, morphing, photogrammetry, registration

#### 132 Two methods for display of high contrast images

Jack Tumblin, Jessica K. Hodgins, Brian K. Guenter

January 1999 ACM Transactions on Graphics (TOG), Volume 18 Issue 1

Publisher: ACM Press

Full text available: pdf(10.28 MB)

Additional Information: full citation, abstract, references, citings, index terms, review

High contrast images are common in night scenes and other scenes that include dark shadows and bright light sources. These scenes are difficult to display because their contrasts greatly exceed the range of most display devices for images. As a result, the image constrasts are compressed or truncated, obscuring subtle textures and details. Humans view and understand high contrast scenes easily, "adapting" their visual response to avoid compression or truncation with no apparent ...

Keywords: adaptation, tone reproduction, visual appearance

# 133 Efficient algorithms for geometric optimization

Pankaj K. Agarwal, Micha Sharir

December 1998 ACM Computing Surveys (CSUR), Volume 30 Issue 4

Publisher: ACM Press

Full text available: pdf(577.74 KB)

Additional Information: full citation, abstract, references, citings, index terms

We review the recent progress in the design of efficient algorithms for various problems in geometric optimization. We present several techniques used to attack these problems, such as parametric searching, geometric alternatives to parametric searching, prune-and-search techniques for linear programming and related problems, and LP-type problems and their efficient solution. We then describe a wide range of applications of these and other techniques to numerous problems in geometric optim ...

**Keywords**: clustering, collision detection, linear programming, matrix searching, parametric searching, proximity problems, prune-and-search, randomized algorithms

Building perceptual textures to visualize multidimensional datasets
Christopher G. Healey, James T. Enns

October 1998 Proceedings of the conference on Visualization '98 VIS '98

Publisher: IEEE Computer Society Press

Full text available: pdf(1.62 MB) Publisher Site

Additional Information: full citation, references, citings, index terms

Keywords: computer graphics, experimental design, human vision, multidimensional dataset, oceanography, perception, preattentive processing, scientific visualization,

135 Understanding and constructing shared spaces with mixed-reality boundaries

Steve Benford, Chris Greenhalgh, Gail Reynard, Chris Brown, Boriana Koleva

September 1998 ACM Transactions on Computer-Human Interaction (TOCHI), Volume 5

Issue 3 Publisher: ACM Press

texture, typhoon

Full text available: pdf(2.50 MB)

Additional Information: full citation, abstract, references, citings, index

terms

We propose an approach to creating shared mixed realities based on the construction of transparent boundaries between real and virtual spaces. First, we introduce a taxonomy that classifies current approaches to shared spaces according to the three dimensions of transportation, artificiality, and spatiality. Second, we discuss our experience of staging a poetry performance simultaneously within real and virtual theaters. This demonstrates the complexities involved in establishing social in ...

**Keywords**: CSCW, augmented reality, collaborative virtual environments, media-spaces, mixed reality, shared spaces, telepresence, video, virtual reality

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Brian Guenter, Cindy Grimm, Daniel Wood, Henrique Malvar, Fredric Pighin

July 1998 Proceedings of the 25th annual conference on Computer graphics and interactive techniques SIGGRAPH '98

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Michael Halle

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Publisher: ACM Press

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<sup>138</sup> Multiple-center-of-projection images

Paul Rademacher, Gary Bishop

July 1998 Proceedings of the 25th annual conference on Computer graphics and interactive techniques SIGGRAPH '98

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**Keywords**: image-based rendering, multiple-center-of-projection images

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Frédéric Pighin, Jamie Hecker, Dani Lischinski, Richard Szeliski, David H. Salesin July 1998 Proceedings of the 25th annual conference on Computer graphics and interactive techniques SIGGRAPH '98

Publisher: ACM Press

Full text available: 📆 pdf(276.04 KB) Additional Information: full citation, references, citings, index terms

**Keywords**: facial animation, facial expression generation, facial modeling, morphing, photogrammetry, view-dependent texture-mapping

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Jonathan Shade, Steven Gortler, Li-wei He, Richard Szeliski July 1998 Proceedings of the 25th annual conference on Computer graphics and

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